CLAIMS

1. A transgenic non-human mammal or a portion thereof, wherein an α-synuclein gene is introduced and the gene is expressed in the neurons, and the number of dopamine-producing neurons in the substantia nigra is significantly decreased as compared with that of a wild-type animal.

2. The transgenic non-human mammal or a portion thereof according to claim 1, wherein the α-synuclein gene is a human α-synuclein gene or a variant thereof.

3. The transgenic non-human mammal or a portion thereof according to claim 1 or 2, wherein the α-synuclein gene is a variant of a wild-type human α-synuclein gene in a manner that substitutes a Thr residue for an Ala residue at amino acid residue 53 in an amino acid sequence encoded by the wild-type human α-synuclein gene.

4. The transgenic non-human mammal or a portion thereof according to any of claims 1 to 3, wherein the α-synuclein gene is a gene that is varied from a wild-type α-synuclein gene in a manner that deletes C terminal amino acid residues encoded by the wild-type α-synuclein gene.

5. The transgenic non-human mammal or a portion thereof according to any of claims 1 to 4, wherein a recombinant DNA incorporating the α-synuclein gene therein under the control of a promoter capable of expressing the α-synuclein gene in the dopamine-producing neurons is introduced.

6. The transgenic non-human mammal or a portion thereof according to any of claims 1 to 5, wherein the promoter capable of expressing the α-synuclein gene in the dopamine-producing neurons is a tyrosine hydroxylase promoter.

7. The transgenic non-human mammal or a portion thereof according to any of claims 1 to 6, wherein an intracerebral dopamine level at an early age is significantly decreased as compared with that of a wild-type animal.

8. The transgenic non-human mammal or a portion thereof according to any of claims 1 to 7, wherein an intracerebral dopamine level at an early age is decreased to 85% or less as compared with that of a wild-type animal.

9. The transgenic non-human mammal or a portion thereof according to any of claims 1 to 8, wherein a tyrosine hydroxylase expression level is decreased to 80% or less as compared with that of a wild-type animal.

10. The transgenic non-human mammal or a portion thereof according to any of claims 1 to 9, wherein a spontaneous locomotor activity is decreased to 60% or less as compared with that of a wild-type animal.

11. The transgenic non-human mammal or a portion thereof according to any of claims 1 to 10, wherein the non-human mammal is a mouse.

12. A method for screening a substance having dopamine-like action wherein the non-human mammal or a portion thereof according to any of claims 1 to 11 is used.

13. The screening method according to claim 12, wherein the substance having dopamine-like action is a therapeutic agent or preventive agent for Parkinson's disease.

14. A substance obtained by the screening method according to claim 12 or 13.

15. A therapeutic agent or preventive agent for Parkinson's disease which comprises a substance obtained by the screening method according to claim 12 or 13, as an active ingredient.